AMENDED CLAIMS

[received by the International Bureau on 08 April 2004 (08.04.04)
original claims 1-20 have been amended, 21-29 have been added. ]

WHAT IS CLAIMED IS:

1. A method for detecting cancer in a patient, comprising:

extracting blood serum or plasma from the patient;

detecting the presence or absence of beta-catenin RNA in the blood serum of plasma; and

determining the presence of the cancer based on the detected presence of beta-catenin RNA.

2. The method according to claim 1, whereby the cancer is colorectal cancer.

3. The method according to claim 2, whereby determining the presence of colorectal cancer comprises detecting pre-neoplastic colorectal polyps based on the detected presence of beta-catenin RNA.

4. The method according to claim 1, whereby the RNA is derived from one of the group consisting of:

gene-encoded beta-catenin,

gene-encoded alpha-catenin,

gene-encoded E-catherin, and

other gene-encoded beta-catenin associated proteins.

5. The method according to claim 1, whereby the patient is a human or animal.

6. A method for detecting cancer in a patient, comprising:

extracting blood serum or plasma from the patient;

detecting the presence or absence of beta-catenin DNA in the blood serum or plasma; and

determining the presence of the cancer based on the detected presence of beta-catenin DNA.

7. The method according to claim 6, whereby the cancer is colorectal cancer.

8. The method according to claim 7, whereby determining the presence of colorectal cancer comprises detecting pre-neoplastic colorectal polyps based on the detected presence of beta-catenin DNA.

9. The method according to claim 6, whereby the DNA is derived from one of the group consisting of:

gene-encoded beta-catenin,

gene-encoded alpha-catenin,

gene-encoded E-catherin, and

other gene-encoded beta-catenin associated proteins.

10. The method according to claim 6, whereby the patient is a human or animal.

11. A method for detecting cancer in a patient, comprising:

extracting blood serum or plasma from the patient;

detecting the presence or absence of beta-catenin-associated gene RNA in the blood serum or plasma; and

determining the presence of the cancer based on the detected presence of beta-catenin associated gene RNA.

12. The method according to claim 11, whereby the cancer is colorectal cancer.

13. The method according to claim 12, whereby determining the presence of colorectal cancer comprises detecting pre-neoplastic colorectal polyps based on the detected beta-catenin-associated gene RNA.

14. The method according to claim 11, whereby the RNA is derived from one of the group consisting of:

gene-encoded beta-catenin,

gene-encoded alpha-catenin,

gene-encoded E-catherin, and

other gene-encoded beta-catenin associated proteins.

15. The method according to claim 11, whereby the patient is a human or animal.

16. A method for detecting cancer in a patient, comprising:

extracting blood serum or plasma from the patient;

detecting the presence or absence of beta-catenin-associated gene DNA in the blood serum or plasma; and

determining the presence of the cancer based on the detected presence of beta-catenin-associated gene DNA.

17. The method according to claim 16, whereby the cancer is colorectal cancer.

18. The method according to claim 17, whereby determining the presence of colorectal cancer comprises detecting pre-neoplastic colorectal polyps based on the presence of detected beta-catenin-associated gene DNA.

19. The method according to claim 16, whereby the DNA is derived from one of the group consisting of:

gene-encoded beta-catenin,

gene-encoded alpha-catenin,

gene-encoded E-catherin, and

other gene-encoded beta-catenin associated proteins.

20. The method according to claim 16, whereby the patient is a human or animal.

21. The method according to claims 2, 7, 12, or 16, whereby the colorectal cancer is colorectal carcinoma or colorectal adenoma.

22. A method of determining the presence of carcinoma, the presence of adenoma, or the absence of carcinoma and adenoma in a patient, comprising:

extracting blood serum or plasma from a patient;

measuring the relative amount of beta-catenin DNA or RNA in the blood serum or plasma of the patient and the relative amount of beta-catenin DNA or RNA in the blood serum or plasma of a control person known not to have carcinoma or adenoma;

determining a ratio of the amount of beta-catenin DNA or RNA detected in the blood serum or plasma of the patient to the amount of beta-catenin DNA or RNA detected in the blood serum or plasma of a control person known not to have carcinoma or adenoma, whereby the ratio of approximately 30-80 indicates the presence of adenoma, the ratio of approximately above 500 indicates the presence of carcinoma, and the ratio of approximately 1 indicates the absence of carcinoma and adenoma.

23. The method according to claim 22, whereby the carcinoma is colorectal carcinoma.

24. The method according to claim 22, whereby the adenoma is colorectal adenoma.

25. The method according to claim 22, whereby the DNA or RNA is derived from one of the group consisting of:

gene-encoded beta-catenin,

gene-encoded alpha-catenin,

gene-encoded E-catherin, and

other gene-encoded beta-catenin associated proteins.

26. The method according to claim 22, whereby the ratio of 30 indicates the presence of adenoma.

27. The method according to claim 22, whereby the ratio of 598 indicates the presence of carcinoma.

28. The method according to claim 22, whereby the relative amount of beta-catenin DNA or RNA in the blood serum or plasma of the patient and the relative amount of beta-catenin DNA or RNA in the blood serum or plasma of a control person known not to have carcinoma or adenoma is measured using real time reverse transcription-polymerase chain reactions.

29. The method according to claims 1, 6, 11, or 16, whereby the detecting step is accomplished using reverse transcription-polymerase chain reactions (RT-PCR).